

Well Name: CARRACAS 23A	Well Location: T32N / R5W / SEC 23 / NWNW / 36.970099 / -107.336641	County or Parish/State: RIO ARRIBA / NM
Well Number: 4	Type of Well: OTHER	Allottee or Tribe Name:
Lease Number: NMNM59704	Unit or CA Name: N/2	Unit or CA Number: NMNM99455
US Well Number: 300392755000S1	Well Status: Producing Gas Well	Operator: MORNINGSTAR PARTNERS LP

Notice of Intent

Sundry ID: 2652582

Type of Submission: Notice of Intent	Type of Action: Other
Date Sundry Submitted: 01/14/2022	Time Sundry Submitted: 09:09
Date proposed operation will begin: 04/01/2022	

Procedure Description: MorningStar requests approval to drill a horizontal sidetrack off the Carracas 23A4. The proposed lateral will be within the current lease. Attached are the Proposed Procedure, OCD Form C-102 Plat, Projected Formation Tops, Current and Proposed WBDs, Well Path Plan, Directional Plan, and Anti-Collision Report.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- Anti_Collision_Rpt_Carracas_23A_4_20220114090813.pdf
- Directional_Plan_Carracas_23A_4_20220114090801.pdf
- Well_Path_Plan_Carracas_23A_4_20220114090749.pdf
- Carracas_23A_4_WBD_Proposed_20220114090738.pdf
- Projected_Formation_Tops_20220114090718.pdf
- C102_Plat_CARRACAS_23A_4_1ST_20220114090705.pdf
- Carracas_23_A_4_Proposed_Procedure_20220114090652.pdf

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Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: CONNIE BLAYLOCK	Signed on: JAN 14, 2022 09:08 AM
Name: MORNINGSTAR PARTNERS LP	
Title: Regulatory Technician	
Street Address: 400 W 7th St.	
City: Forth Worth	State: TX
Phone: (817) 334-7882	
Email address: CBLAYLOCK@MSPARTNERS.COM	

Field Representative

Representative Name: Amy Byars		
Street Address:		
City:	State:	Zip:
Phone:		
Email address: abyars@mspartners.com		

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5055647742	BLM POC Email Address: krennick@blm.gov
Disposition: Approved	Disposition Date: 02/08/2022
Signature: Kenneth Rennick	

DISTRICT I1825 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720**DISTRICT II**811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720**DISTRICT III**1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170**DISTRICT IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3482State of New Mexico
Energy, Minerals & Natural Resources DepartmentForm C-102
Revised August 1, 2011Submit one copy to appropriate
District OfficeOIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-27550		² Pool Code 71629	³ Pool Name BASIN FRIUTLAND COAL
⁴ Property Code 329022	⁵ Property Name CARRACAS 23A		⁶ Well Number 4-1ST
⁷ GRID No. 330132	⁸ Operator Name MORNINGSTAR OPERATING LLC		⁹ Elevation 7339'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	23	32N	5W		1066'	NORTH	1202'	WEST	RIO ARRIBA

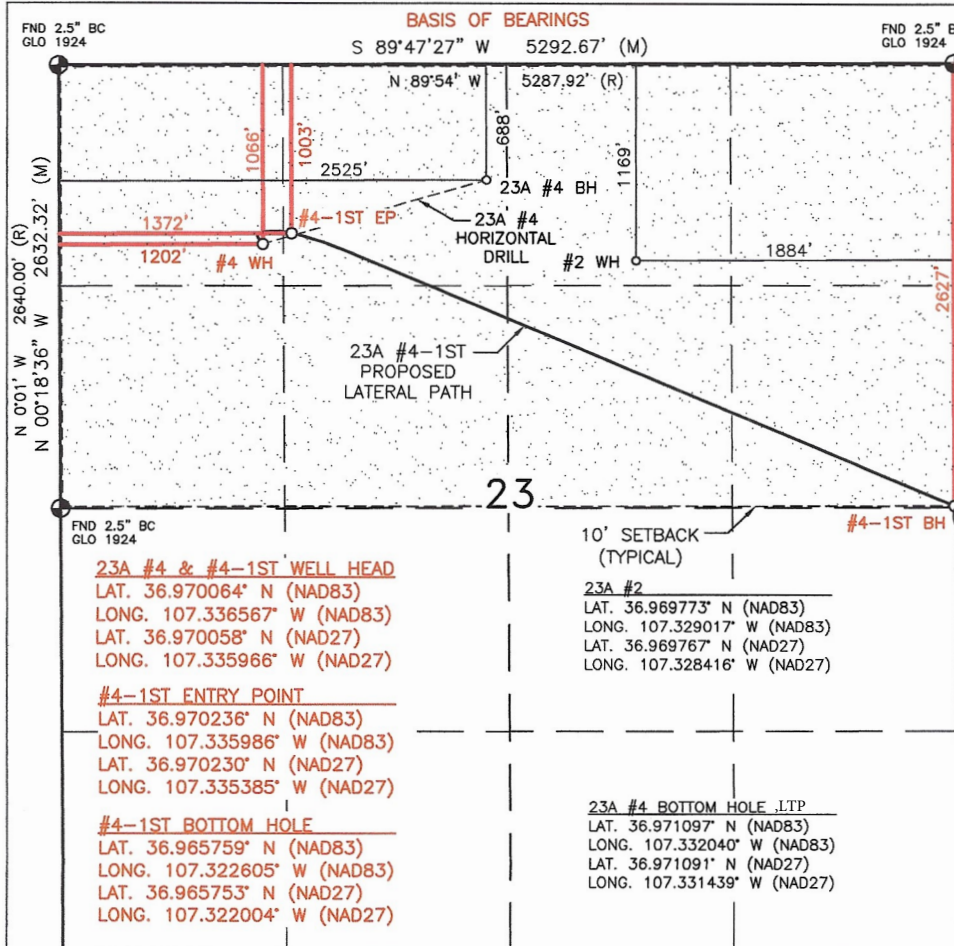
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	23	32N	5W		2627'	NORTH	10'	EAST	RIO ARRIBA

¹² Dedicated Acres N/2 SEC. 23 320.00 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13119
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature

Date

Connie Blaylock
Printed Name

cblaylock@mspartners.com
E-mail Address

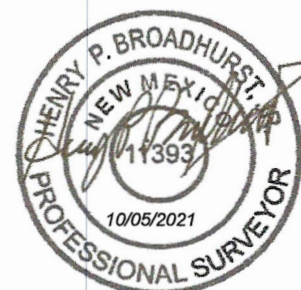
SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MAY 19, 2021

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393

Carracas 23 A 4 Proposed Sidetrack Procedures

1. Prepare existing well for drilling operations with a Pulling Unit
2. Pull tubing and rods
3. PU Mill and TIH to verify casing is clean
4. Set bottom Bridge Plug at approximately 3,900', above open Liner
5. Roll hole and pressure test casing
6. Set top Bridge Plug at approximately 3,806' below proposed window area
7. Release Pulling Unit
8. MIRU drilling rig
9. RU BOP and test
10. PU whipstock and casing mill assembly and set whipstock for casing exit at 3,786' MD
11. Release whip and mill window f/ 3,780' – 3,786'
12. TOOH for curve BHA and drill sidetrack
13. Planned exit at 3,786' MD / 3,744' TVD (directional pilot well)
14. Drill 6-1/4" curve and lateral from 3,786' MD / 3,344' TVD to 8,118' MD / 3,929' TVD at 89.56° Inc, 113.77° azimuth
15. TOOH and run 4-1/2" (pre-perforated every other joint) liner from approximately 3,790' MD to 8,108' MD
16. Rig down and release drilling rig
17. MIRU Pulling Unit
18. Optional: RIH and retrieve whipstock w/ work string and jars
Retrieve or drill out upper Bridge Plug at 3,806'
19. Run production tubing and equipment to test lateral completion
20. Secure well, rig down and move off location

ATTACHED ARE WELLPATH RPT, PLAT(C-102), WBD.

MorningStar Operating, LLC

Sidetrack Proposal

Carracas 23A-4
Rio Arriba County, NM

Prepared by: CArnold
Date: 08/07/2017
Proposed: J Marschall 01/04/2022

KB = 15 ft
GL = 7,339 ft
API# 30-039-27550

Spud Date: 07/24/2005
Well First Delivered: 09/17/2005

TD - 5,165' MD; 3,888' TVD (Same as PBTD)

12 1/4" to 251'

Surface Csg: 5 jts 9 5/8" 32.3# H-40 ST&C
Setting Depth: 251 ft

Cement
120 sx Class B (142 ft³)
Circulate 7 bbls to surface

8 3/4" hole to 4,160' MD
Intermediate Csg: 94 jts 7" 23# J-55
Setting Depth: 4,159' MD

Cement
Lead: 560sx 65/35 Class B
Tail: 125sx Class B
Total cmt (1,246 ft³)
Circulate 70 bbls to surface

6 1/4" Upper Sidetrack hole to 8,118'
Est. Prod Liner: 103 jts 4.5" 11.6# J-55 LT&C
Setting Depth: 8,117' MD; 3,919' TVD
TOL: 3,790' MD
No cement

6 1/4" Lower Lateral hole to 5,165'
Prod Liner: 24 jts 4.5" 11.6# J-55 LT&C
Setting Depth: 5,165' MD; 3,888' TVD
TOL: 4,105' MD
No cement

Whipstock @ 3,786'

BP @ 3,806'
@ 46°

BP @ 3,900'
@ 56°

Lower Pre-Perforated Liner:
6 jspf, 0.50" dia
4147'-4418' MD
4501'-4772' MD
4850-5121' MD

Sidetrack Window f/ 3,780' -3,786'

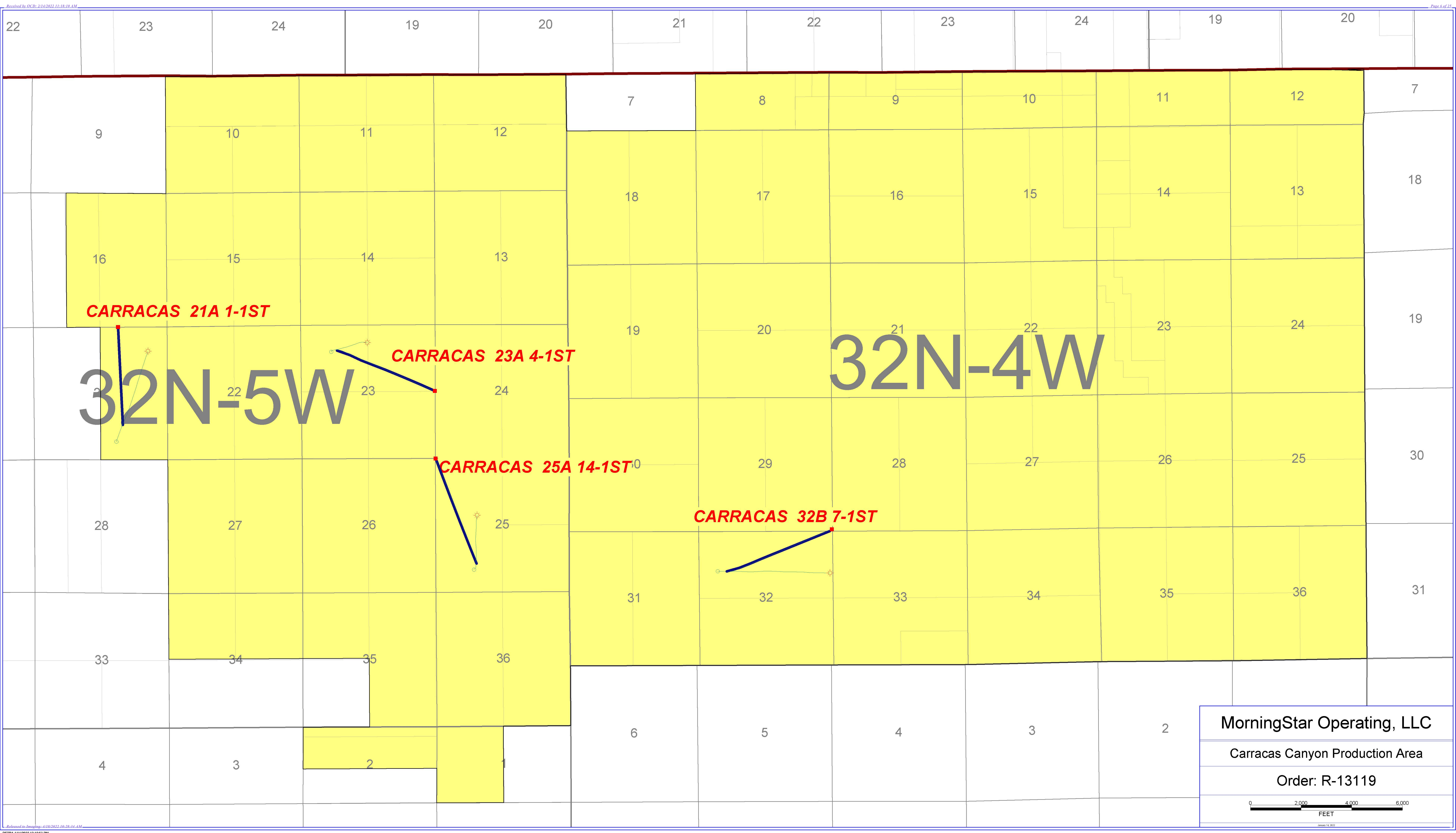
Upper ST Perforations:
Pre-Perforated Liner
Est. 4,180' - 8,076' = 3,896'
Est. 11,340 holes @ 6 jspf
Est 45 jts perf'd (every other)

TD - 8,118' MD; 3,929' TVD

4.5" Liner Top 4,105' MD

7" Set @ 4,159' MD

TD - 5,165' MD; 3,888' TVD



State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: MORNINGSTAR OPERATING LLC **OGRID:** 330132 **Date:** 01 / 25 / 2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
CARRACAS 23A 4	30-039-27550	D 23 32N 05W	1060 FNL	0	1500	40
			1170 FWL			

IV. Central Delivery Point Name: CARRACAS GATHERING SYSTEM [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
CARRACAS 23A 4	30-039-27550	07/24/2005		05/01/2022	SWAB 5/22/22	05/23/22

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

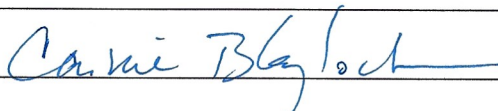
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	
Printed Name:	Connie Blaylock
Title:	Regulatory Analyst
E-mail Address:	cblaylock@mspartners.com
Date:	01/25/2022
Phone:	817-334-7882
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

MorningStar Operating LLC

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

Surface facilities for the well are located on site. Process equipment includes a 2ph separator and water tanks. Vessels are sized based on historical and predicted well performance and provide adequate time for separation. Natural gas will be sold to the sales pipeline and only vented during emergency/non-scheduled issues. Natural gas is the sole product; consequently, there will every effort to minimize waste.

VII. Operational Practices: Attach a complete description of the action Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

- Drilling Operations: Any natural gas produced during drilling operations will be combusted with a flare line. A properly sized flare stack will be located a minimum of 100 feet from the nearest surface hole location. If flaring isn't possible or poses a risk, Operator will vent natural gas to avoid any safety or environmental risks and report natural gas.
- Completion Operations: There is no frac or flowback operations planned for this recompletion. All natural gas production of sufficient pressure will be turned to separation facilities and gathering pipeline for sales.
- Production Operations: Efforts will be made to minimize waste. Process equipment (separators and tanks) is designed for efficient separation and routing produced gas to the sales pipeline. Equipment will be properly maintained with routine inspections and preventative maintenance. Weekly AVOs will be performed at facilities.

VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

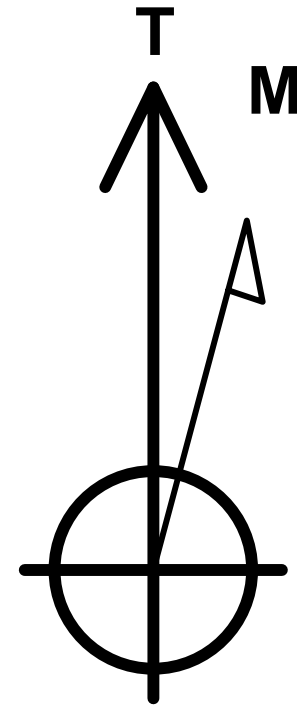
- Best management practices are used to minimize venting and flaring during downhole operations.
- Flaring will be used in lieu of venting when feasible.
- Adequate well control during completion operations will be employed to minimize oil and gas production.
- Tanks and vessels are isolated from their respective facilities prior to inspection, maintenance, and repairs.
- The preventive maintenance program includes weekly AVO inspections, identification of failures or malfunctions, and repairs as needed.
- Coordinate with third-party gathering and sales operators to minimize downtime and the need for venting/flaring during downstream pipeline and gas plant events.

Projected Fm. Tops - Carracas 23A 4-1ST			
FORMATION:	MD	SSTVD*	TVD*
SAN JOSE	at surface	at surface	at surface
NACIMIENTO	1939	5418	1939
OJO ALAMO	3268	4090	3267
KIRTLAND	3398	3960	3397
FRUITLAND*	3689	3687	3670

*The Fruitland top is being updated.



Company: MorningStar Partners
Field: Rio Arriba County, NM (NAD 27 - True North)
Location: Carracas 23A 4
Well Location: Carracas 23A 4
Wellbore: ST01
Plan: Plan 3
GL: GL: 7339' + 18' KB @ 7357.00usft



Azimuths to True North
Magnetic North: 8.67°

Magnetic Field
Strength: 49722.3nT
Dip Angle: 63.44°
Date: 12/21/2021
Model: IGRF2020



To convert a Magnetic Direction to a True Direction, Add 8.67° East

PROJECT DETAILS: Rio Arriba County, NM (NAD 27 - True North)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level

WELL DETAILS: Carracas 23A 4

	GL: 7339' + 18' KB @ 7357.00usft		7339.00
+N/-S	+E/-W	Northing	Easting
0.00	0.00	2172748.27	645296.28
			Latitude
			36.970058
			Longitude
			-107.335966

SECTION DETAILS

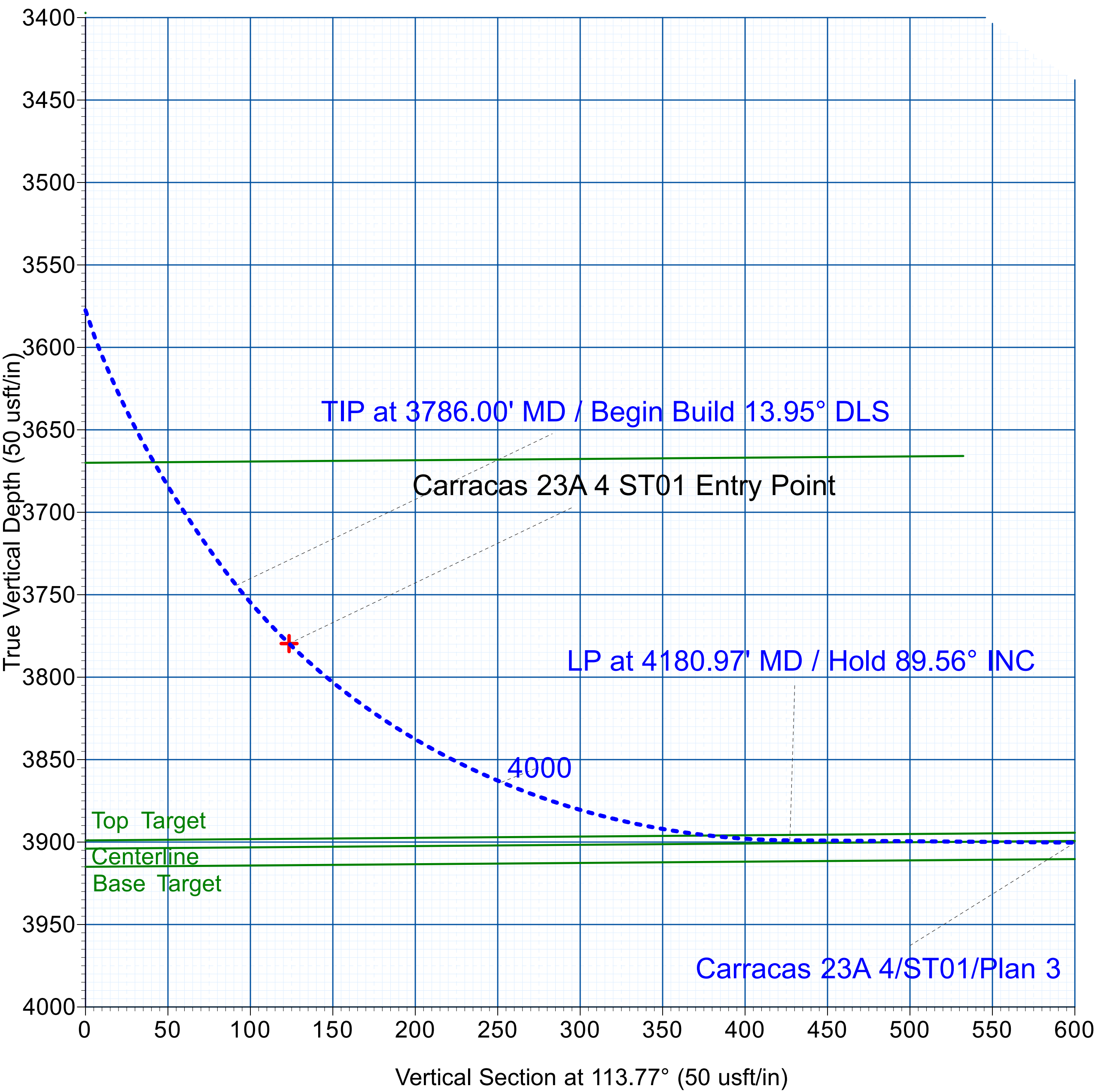
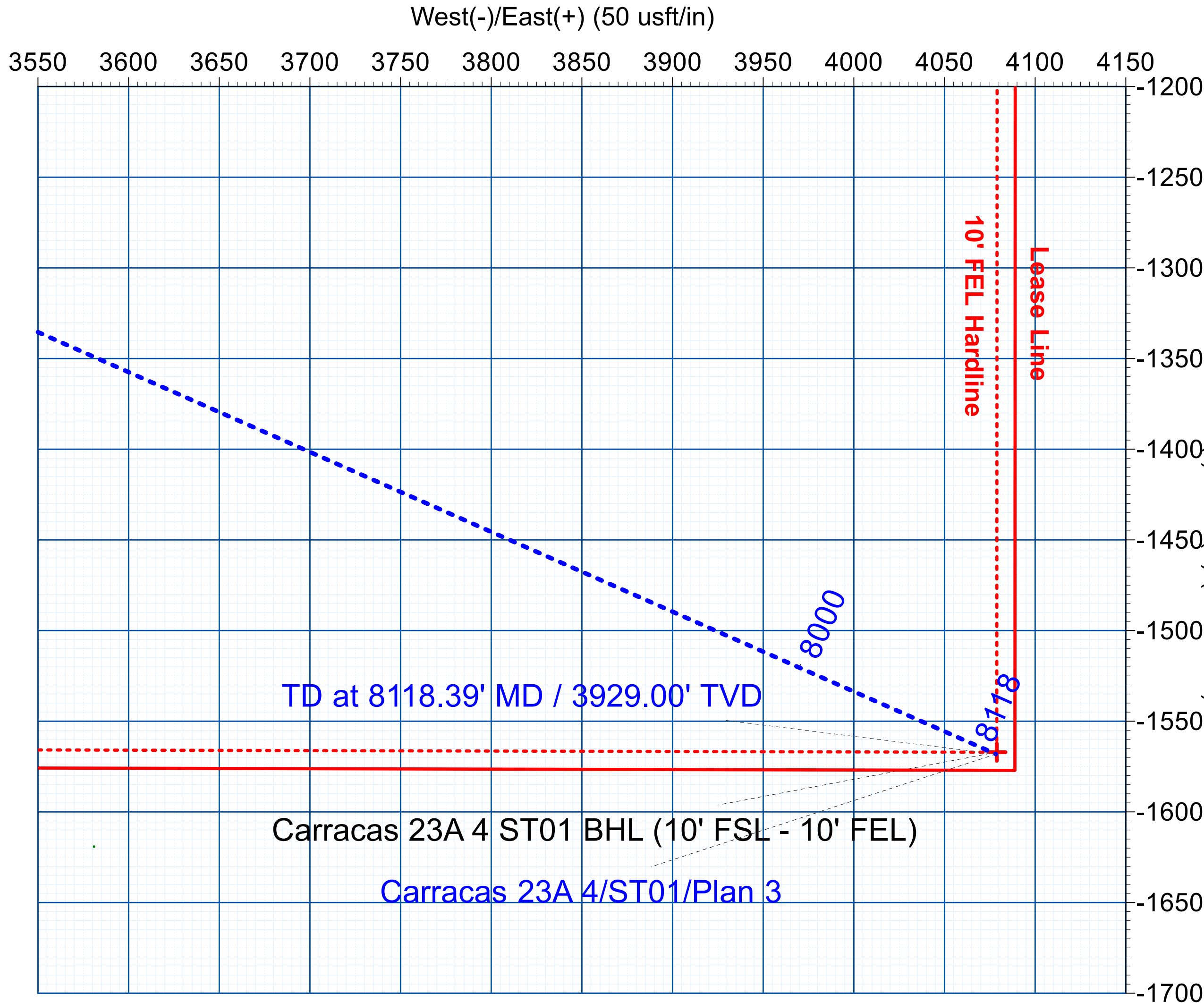
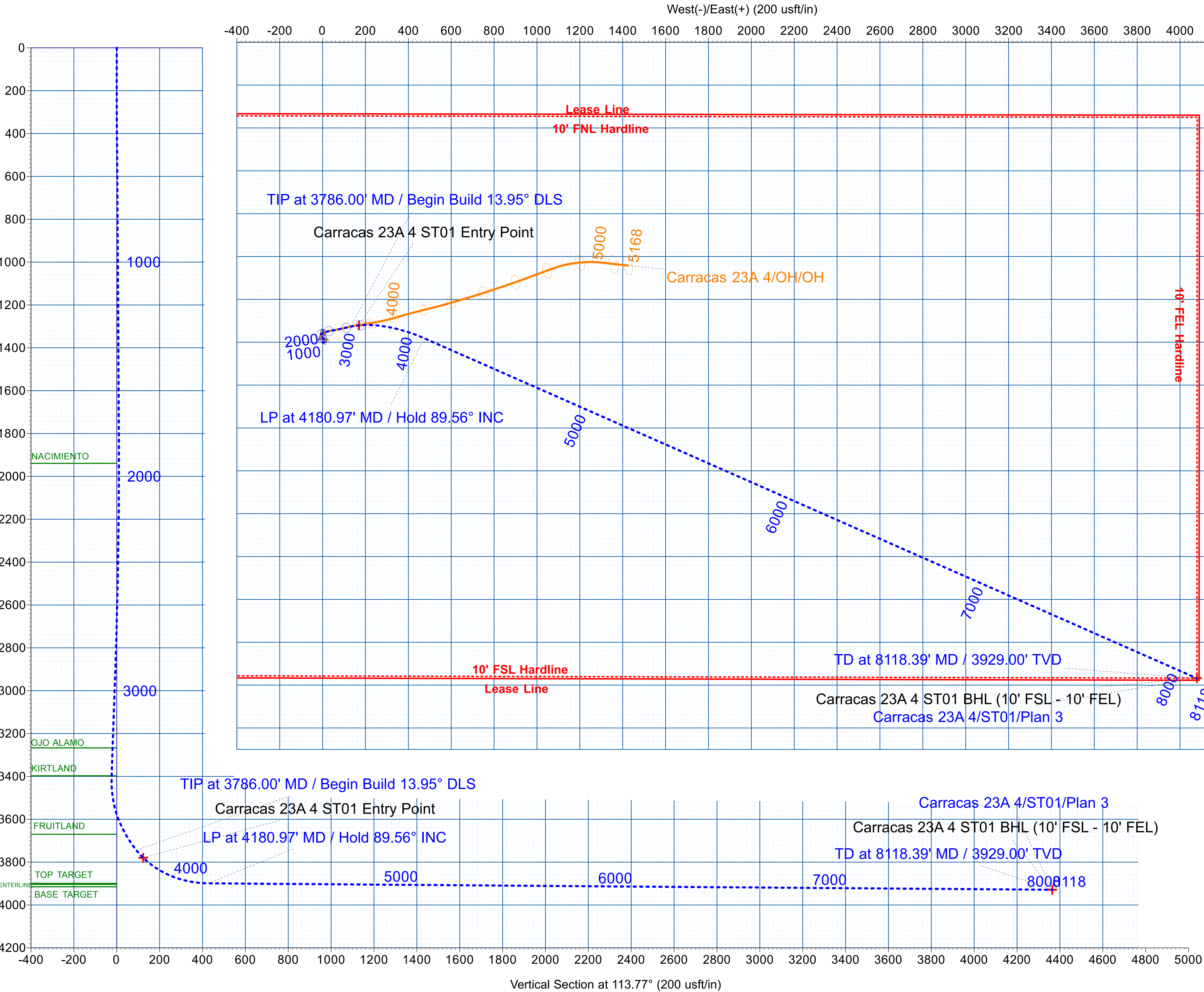
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
3786.00	44.42	77.85	3744.33	73.40	132.30	0.00	0.00	91.49	TIP at 3786.00' MD / Begin Build 13.95° DLS
4180.97	89.56	113.77	3899.00	18.61	474.96	13.95	45.66	427.17	LP at 4180.97' MD / Hold 89.56° INC
8118.39	89.56	113.77	3929.00	-1568.11	4078.39	0.00	0.00	4364.48	TD at 8118.39' MD / 3929.00' TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Carracas 23A 4 ST01 Entry Point	3779.66	79.07	169.73	2172828.23	645465.59	36.970275	-107.335385
Carracas 23A 4 ST01 BHL (10' FSL - 10' FEL)	3929.00	-1567.10	4078.84	2171202.49	649383.24	36.965753	-107.322005

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1938.92	1939.01	Nacimiento
3267.15	3267.76	Ojo Alamo
3397.18	3397.89	Kirtland
3669.68	3688.86	Fruitland
3896.10	4131.92	Top Target
3899.86	4293.37	Centerline
3905.33	5012.43	Base Target



MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 23A 4

Carracas 23A 4

ST01

Plan: Plan 3

Standard Survey Report

22 December, 2021



Legacy Directional Survey Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Well:	Carracas 23A 4	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	Plan 3	Database:	EDM 5000.14 Single User Db

Project	Rio Arriba County, NM (NAD 27 - True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site		Carracas 23A 4			
Site Position:		Northing:	2,172,748.27 usft	Latitude:	36.970058
From:	Lat/Long	Easting:	645,296.28 usft	Longitude:	-107.335966
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well	Carracas 23A 4					
Well Position	+N/-S	0.00 usft	Northing:	2,172,748.27 usft	Latitude:	36.970058
	+E/-W	0.00 usft	Easting:	645,296.28 usft	Longitude:	-107.335966
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,339.00 usft
Grid Convergence:		0.30 °				

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	12/21/2021	8.67	63.44	49,722.30918856

Design	Plan 3				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	3,786.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	113.77	

Survey Tool Program	Date	12/22/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
253.00	3,786.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM	
3,786.00	8,118.39	Plan 3 (ST01)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
253.00	0.00	0.30	253.00	0.00	0.00	0.00	0.00	0.00	0.00	
353.00	0.65	126.31	353.00	-0.34	0.46	0.55	0.65	0.65	0.00	
653.00	0.29	88.41	652.99	-1.32	2.59	2.90	0.15	-0.12	-12.63	
953.00	0.45	111.69	952.98	-1.74	4.44	4.76	0.07	0.05	7.76	
1,253.00	0.74	51.78	1,252.97	-0.97	7.06	6.85	0.22	0.10	-19.97	
1,553.00	0.78	47.32	1,552.94	1.61	10.08	8.58	0.02	0.01	-1.49	
1,853.00	0.68	51.78	1,852.92	4.09	12.98	10.23	0.04	-0.03	1.49	
2,153.00	0.67	331.98	2,152.90	6.74	13.55	9.69	0.29	0.00	-26.60	

Legacy Directional Survey Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Well:	Carracas 23A 4	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	Plan 3	Database:	EDM 5000.14 Single User Db

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,453.00	1.20	316.66	2,452.86	10.58	10.57	5.41	0.19	0.18	-5.11
2,753.00	1.69	310.21	2,752.77	15.72	5.04	-1.72	0.17	0.16	-2.15
3,053.00	2.43	319.98	3,052.57	23.44	-2.43	-11.67	0.27	0.25	3.26
3,353.00	2.25	329.45	3,352.32	33.39	-9.51	-22.16	0.14	-0.06	3.16
3,390.00	2.19	329.31	3,389.29	34.62	-10.24	-23.33	0.16	-0.16	-0.38
3,421.00	1.86	5.87	3,420.28	35.63	-10.49	-23.96	4.22	-1.06	117.94
3,452.00	4.85	64.57	3,451.23	36.69	-9.26	-23.26	13.53	9.65	189.35
3,483.00	9.80	69.28	3,481.96	38.19	-5.60	-20.52	16.07	15.97	15.19
3,511.00	14.66	64.75	3,509.32	40.55	-0.17	-16.50	17.68	17.36	-16.18
3,540.00	19.20	60.93	3,537.06	44.43	7.32	-11.21	16.11	15.66	-13.17
3,570.00	22.18	70.64	3,565.13	48.71	16.98	-4.09	15.12	9.93	32.37
3,602.00	24.94	78.87	3,594.46	52.01	29.31	5.86	13.40	8.63	25.72
3,631.00	28.14	80.35	3,620.41	54.34	42.05	16.58	11.27	11.03	5.10
3,660.00	31.55	79.16	3,645.56	56.92	56.25	28.54	11.93	11.76	-4.10
3,691.00	35.24	78.40	3,671.43	60.24	72.98	42.51	11.98	11.90	-2.45
3,722.00	38.28	77.84	3,696.27	64.06	91.13	57.58	9.87	9.81	-1.81
3,753.00	41.11	76.65	3,720.12	68.44	110.44	73.49	9.45	9.13	-3.84
3,783.00	44.15	77.66	3,742.19	72.95	130.25	89.80	10.39	10.13	3.37
3,786.00	44.42	77.85	3,744.34	73.40	132.30	91.49	9.95	8.89	6.40
TIP at 3786.00' MD / Begin Build 13.95° DLS									
3,800.00	45.80	79.80	3,754.22	75.32	142.03	99.62	13.95	9.87	13.92
3,825.00	48.34	83.06	3,771.24	78.03	160.12	115.09	13.95	10.18	13.04
3,850.00	50.97	86.07	3,787.43	79.83	179.08	131.72	13.95	10.52	12.03
3,875.00	53.67	88.85	3,802.71	80.70	198.85	149.45	13.95	10.80	11.15
3,900.00	56.43	91.45	3,817.03	80.63	219.33	168.23	13.95	11.04	10.40
3,925.00	59.24	93.89	3,830.34	79.64	240.47	187.97	13.95	11.25	9.75
3,950.00	62.10	96.19	3,842.59	77.72	262.18	208.61	13.95	11.42	9.19
3,975.00	64.99	98.37	3,853.72	74.88	284.37	230.07	13.95	11.56	8.72
4,000.00	67.91	100.45	3,863.71	71.13	306.98	252.27	13.95	11.68	8.31
4,025.00	70.86	102.44	3,872.51	66.48	329.91	275.12	13.95	11.79	7.97
4,050.00	73.82	104.36	3,880.10	60.96	353.08	298.55	13.95	11.87	7.69
4,075.00	76.81	106.23	3,886.44	54.58	376.40	322.47	13.95	11.94	7.46
4,100.00	79.80	108.05	3,891.50	47.37	399.79	346.78	13.95	11.99	7.28
4,125.00	82.81	109.84	3,895.28	39.34	423.16	371.40	13.95	12.03	7.15
4,150.00	85.83	111.60	3,897.75	30.54	446.42	396.24	13.95	12.05	7.05
4,175.00	88.84	113.35	3,898.92	21.00	469.49	421.20	13.95	12.07	7.00
4,180.97	89.56	113.77	3,899.00	18.61	474.96	427.17	13.95	12.07	6.98
LP at 4180.97' MD / Hold 89.56° INC									
4,200.00	89.56	113.77	3,899.15	10.94	492.38	446.20	0.00	0.00	0.00
4,300.00	89.56	113.77	3,899.91	-29.36	583.90	546.20	0.00	0.00	0.00
4,400.00	89.56	113.77	3,900.67	-69.65	675.42	646.20	0.00	0.00	0.00
4,500.00	89.56	113.77	3,901.43	-109.95	766.93	746.19	0.00	0.00	0.00
4,600.00	89.56	113.77	3,902.19	-150.25	858.45	846.19	0.00	0.00	0.00

Legacy Directional Survey Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Well:	Carracas 23A 4	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	Plan 3	Database:	EDM 5000.14 Single User Db

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,700.00	89.56	113.77	3,902.95	-190.55	949.97	946.19	0.00	0.00	0.00	
4,800.00	89.56	113.77	3,903.72	-230.85	1,041.49	1,046.19	0.00	0.00	0.00	
4,900.00	89.56	113.77	3,904.48	-271.15	1,133.00	1,146.18	0.00	0.00	0.00	
5,000.00	89.56	113.77	3,905.24	-311.45	1,224.52	1,246.18	0.00	0.00	0.00	
5,100.00	89.56	113.77	3,906.00	-351.75	1,316.04	1,346.18	0.00	0.00	0.00	
5,200.00	89.56	113.77	3,906.76	-392.04	1,407.56	1,446.17	0.00	0.00	0.00	
5,300.00	89.56	113.77	3,907.53	-432.34	1,499.07	1,546.17	0.00	0.00	0.00	
5,400.00	89.56	113.77	3,908.29	-472.64	1,590.59	1,646.17	0.00	0.00	0.00	
5,500.00	89.56	113.77	3,909.05	-512.94	1,682.11	1,746.17	0.00	0.00	0.00	
5,600.00	89.56	113.77	3,909.81	-553.24	1,773.63	1,846.16	0.00	0.00	0.00	
5,700.00	89.56	113.77	3,910.57	-593.54	1,865.14	1,946.16	0.00	0.00	0.00	
5,800.00	89.56	113.77	3,911.33	-633.84	1,956.66	2,046.16	0.00	0.00	0.00	
5,900.00	89.56	113.77	3,912.10	-674.13	2,048.18	2,146.15	0.00	0.00	0.00	
6,000.00	89.56	113.77	3,912.86	-714.43	2,139.70	2,246.15	0.00	0.00	0.00	
6,100.00	89.56	113.77	3,913.62	-754.73	2,231.21	2,346.15	0.00	0.00	0.00	
6,200.00	89.56	113.77	3,914.38	-795.03	2,322.73	2,446.15	0.00	0.00	0.00	
6,300.00	89.56	113.77	3,915.14	-835.33	2,414.25	2,546.14	0.00	0.00	0.00	
6,400.00	89.56	113.77	3,915.91	-875.63	2,505.77	2,646.14	0.00	0.00	0.00	
6,500.00	89.56	113.77	3,916.67	-915.93	2,597.28	2,746.14	0.00	0.00	0.00	
6,600.00	89.56	113.77	3,917.43	-956.22	2,688.80	2,846.13	0.00	0.00	0.00	
6,700.00	89.56	113.77	3,918.19	-996.52	2,780.32	2,946.13	0.00	0.00	0.00	
6,800.00	89.56	113.77	3,918.95	-1,036.82	2,871.84	3,046.13	0.00	0.00	0.00	
6,900.00	89.56	113.77	3,919.71	-1,077.12	2,963.35	3,146.13	0.00	0.00	0.00	
7,000.00	89.56	113.77	3,920.48	-1,117.42	3,054.87	3,246.12	0.00	0.00	0.00	
7,100.00	89.56	113.77	3,921.24	-1,157.72	3,146.39	3,346.12	0.00	0.00	0.00	
7,200.00	89.56	113.77	3,922.00	-1,198.02	3,237.91	3,446.12	0.00	0.00	0.00	
7,300.00	89.56	113.77	3,922.76	-1,238.32	3,329.42	3,546.11	0.00	0.00	0.00	
7,400.00	89.56	113.77	3,923.52	-1,278.61	3,420.94	3,646.11	0.00	0.00	0.00	
7,500.00	89.56	113.77	3,924.29	-1,318.91	3,512.46	3,746.11	0.00	0.00	0.00	
7,600.00	89.56	113.77	3,925.05	-1,359.21	3,603.97	3,846.10	0.00	0.00	0.00	
7,700.00	89.56	113.77	3,925.81	-1,399.51	3,695.49	3,946.10	0.00	0.00	0.00	
7,800.00	89.56	113.77	3,926.57	-1,439.81	3,787.01	4,046.10	0.00	0.00	0.00	
7,900.00	89.56	113.77	3,927.33	-1,480.11	3,878.53	4,146.10	0.00	0.00	0.00	
8,000.00	89.56	113.77	3,928.09	-1,520.41	3,970.04	4,246.09	0.00	0.00	0.00	
8,100.00	89.56	113.77	3,928.86	-1,560.70	4,061.56	4,346.09	0.00	0.00	0.00	
8,118.39	89.56	113.77	3,929.00	-1,568.11	4,078.39	4,364.48	0.00	0.00	0.00	
TD at 8118.39' MD / 3929.00' TVD										

Legacy Directional Survey Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Well:	Carracas 23A 4	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	Plan 3	Database:	EDM 5000.14 Single User Db

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Carracas 23A 4 ST01 Er - plan misses target center by 0.01usft at 3837.82usft MD (3779.65 TVD, 79.07 N, 169.74 E) - Point	0.00	0.00	3,779.66	79.07	169.73	2,172,828.23	645,465.60	36.970275	-107.335385
Carracas 23A 4 ST01 Bl - plan misses target center by 1.11usft at 8118.39usft MD (3929.00 TVD, -1568.11 N, 4078.39 E) - Point	0.00	0.00	3,929.00	-1,567.10	4,078.84	2,171,202.49	649,383.24	36.965753	-107.322005

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,939.01	1,938.92	Nacimiento		-0.44	113.77	
3,267.76	3,267.15	Ojo Alamo		-0.44	113.77	
3,397.89	3,397.18	Kirtland		-0.44	113.77	
3,688.86	3,669.68	Fruitland		-0.44	113.77	
4,131.92	3,896.10	Top Target		-0.44	113.77	
4,293.37	3,899.86	Centerline		-0.44	113.77	
5,012.43	3,905.33	Base Target		-0.44	113.77	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3786	3744	73	132	TIP at 3786.00' MD / Begin Build 13.95° DLS	
4181	3899	19	475	LP at 4180.97' MD / Hold 89.56° INC	
8118	3929	-1568	4078	TD at 8118.39' MD / 3929.00' TVD	

Checked By: _____	Approved By: _____	Date: _____
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MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 23A 4

Carracas 23A 4

ST01

Plan 3

Anticollision Report

22 December, 2021



Legacy Directional Anticollision Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Reference Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Carracas 23A 4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST01	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan 3	Offset TVD Reference:	Offset Datum

Reference	Plan 3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 10,000.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	12/22/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
253.00	3,786.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM	
3,786.00	8,118.39	Plan 3 (ST01)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Carracas 23A 4						
Carracas 23A 4 - OH - OH	4,100.00	4,081.62	81.64	77.83	21.429	CC, ES
Carracas 23A 4 - OH - OH	5,100.00	5,135.91	717.61	678.00	18.118	SF

Offset Design: Carracas 23A 4 - Carracas 23A 4 - OH - OH													Offset Site Error: 0.00 usft	
Survey Program: 253-MWD+IGRF				Offset					Rule Assigned:				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
3,786.00	3,744.29	3,786.00	3,744.33	0.00	0.00	-93.33	73.40	132.29	1.52	1.52	0.00	N/A		
3,800.00	3,754.22	3,800.00	3,754.23	0.09	0.07	-100.17	75.41	142.00	0.10	-0.02	0.12	0.819	Level 3	
3,801.47	3,755.24	3,801.47	3,755.25	0.09	0.07	-100.31	75.61	143.03	0.12	-0.01	0.13	0.912	Level 3	
3,900.00	3,817.03	3,899.65	3,817.80	0.45	0.61	-102.98	88.32	217.50	7.94	6.93	1.00	7.913		
4,000.00	3,863.71	3,994.67	3,865.69	0.92	1.34	-103.63	104.01	297.89	34.17	31.92	2.25	15.181		
4,100.00	3,891.50	4,081.62	3,894.27	1.63	2.24	-99.16	125.69	376.91	81.64	77.83	3.81	21.429	CC, ES	
4,200.00	3,899.15	4,164.39	3,903.49	2.64	3.27	-92.61	147.14	456.13	141.01	135.24	5.77	24.456		
4,300.00	3,899.91	4,243.98	3,902.04	4.44	4.37	-91.12	166.16	533.40	201.94	194.76	7.19	28.097		
4,400.00	3,900.67	4,314.00	3,899.67	10.18	5.44	-90.08	184.96	600.80	265.32	255.13	10.19	26.036		
4,500.00	3,901.43	4,390.26	3,895.73	12.92	6.70	-89.07	206.45	673.85	329.86	317.24	12.62	26.133		
4,600.00	3,902.19	4,456.18	3,893.06	15.34	7.85	-88.62	225.78	736.82	395.32	380.23	15.08	26.209		
4,700.00	3,902.95	4,527.44	3,894.54	17.67	9.16	-88.99	248.21	804.43	462.35	445.36	16.98	27.225		
4,800.00	3,903.72	4,597.00	3,897.08	19.96	10.48	-89.43	270.28	870.35	529.59	510.85	18.74	28.263		
4,900.00	3,904.48	4,659.00	3,898.35	22.25	11.70	-89.60	290.79	928.84	597.91	577.24	20.66	28.937		
5,000.00	3,905.24	4,725.71	3,898.08	24.56	13.04	-89.57	313.89	991.42	667.41	645.25	22.16	30.124		
5,100.00	3,906.00	5,135.91	3,891.53	26.88	21.52	-88.93	361.68	1,392.07	717.61	678.00	39.61	18.118	SF	
5,200.00	3,906.76	5,168.00	3,890.51	29.22	22.17	-88.84	358.29	1,423.96	750.69	709.64	41.05	18.288		
5,300.00	3,907.53	5,168.00	3,890.51	31.58	22.17	-88.84	358.29	1,423.96	794.38	754.44	39.94	19.891		
5,400.00	3,908.29	5,168.00	3,890.51	33.97	22.17	-88.84	358.29	1,423.96	847.66	810.01	37.65	22.514		
5,500.00	3,909.05	5,168.00	3,890.51	36.38	22.17	-88.84	358.29	1,423.96	908.86	874.76	34.10	26.652		
5,600.00	3,909.81	5,168.00	3,890.51	38.81	22.17	-88.84	358.29	1,423.96	976.49	948.32	28.17	34.670		
5,700.00	3,910.57	5,168.00	3,890.51	41.25	22.17	-88.84	358.29	1,423.96	1,049.30	1,018.88	30.42	34.496		
5,800.00	3,911.33	5,168.00	3,890.51	43.72	22.17	-88.84	358.29	1,423.96	1,126.29	1,091.25	35.03	32.148		
5,900.00	3,912.10	5,168.00	3,890.51	46.20	22.17	-88.84	358.29	1,423.96	1,206.66	1,168.49	38.16	31.620		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Anticollision Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Reference Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Carracas 23A 4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST01	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan 3	Offset TVD Reference:	Offset Datum

Offset Design: Carracas 23A 4 - Carracas 23A 4 - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 253-MWD+IGRF												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,000.00	3,912.86	5,168.00	3,890.51	48.69	22.17	-88.84	358.29	1,423.96	1,289.77	1,249.18	40.59	31.776	
6,100.00	3,913.62	5,168.00	3,890.51	51.20	22.17	-88.84	358.29	1,423.96	1,375.14	1,332.55	42.59	32.287	
6,200.00	3,914.38	5,168.00	3,890.51	53.72	22.17	-88.84	358.29	1,423.96	1,462.36	1,418.06	44.30	33.008	
6,300.00	3,915.14	5,168.00	3,890.51	56.25	22.17	-88.84	358.29	1,423.96	1,551.13	1,505.32	45.81	33.861	
6,400.00	3,915.91	5,168.00	3,890.51	58.80	22.17	-88.84	358.29	1,423.96	1,641.19	1,594.03	47.16	34.802	
6,500.00	3,916.67	5,168.00	3,890.51	61.35	22.17	-88.84	358.29	1,423.96	1,732.34	1,683.95	48.39	35.801	
6,600.00	3,917.43	5,168.00	3,890.51	63.91	22.17	-88.84	358.29	1,423.96	1,824.42	1,774.89	49.52	36.839	
6,700.00	3,918.19	5,168.00	3,890.51	66.48	22.17	-88.84	358.29	1,423.96	1,917.29	1,866.70	50.58	37.902	
6,800.00	3,918.95	5,168.00	3,890.51	69.06	22.17	-88.84	358.29	1,423.96	2,010.84	1,959.26	51.58	38.981	
6,900.00	3,919.71	5,168.00	3,890.51	71.65	22.17	-88.84	358.29	1,423.96	2,104.99	2,052.46	52.53	40.069	
7,000.00	3,920.48	5,168.00	3,890.51	74.24	22.17	-88.84	358.29	1,423.96	2,199.66	2,146.22	53.44	41.161	
7,100.00	3,921.24	5,168.00	3,890.51	76.84	22.17	-88.84	358.29	1,423.96	2,294.77	2,240.46	54.31	42.252	
7,200.00	3,922.00	5,168.00	3,890.51	79.45	22.17	-88.84	358.29	1,423.96	2,390.29	2,335.14	55.15	43.341	
7,300.00	3,922.76	5,168.00	3,890.51	82.06	22.17	-88.84	358.29	1,423.96	2,486.16	2,430.19	55.96	44.424	
7,400.00	3,923.52	5,168.00	3,890.51	84.67	22.17	-88.84	358.29	1,423.96	2,582.34	2,525.59	56.75	45.501	
7,500.00	3,924.29	5,168.00	3,890.51	87.29	22.17	-88.84	358.29	1,423.96	2,678.80	2,621.28	57.52	46.571	
7,600.00	3,925.05	5,168.00	3,890.51	89.92	22.17	-88.84	358.29	1,423.96	2,775.51	2,717.24	58.27	47.632	
7,700.00	3,925.81	5,168.00	3,890.51	92.54	22.17	-88.84	358.29	1,423.96	2,872.45	2,813.45	59.00	48.683	
7,800.00	3,926.57	5,168.00	3,890.51	95.18	22.17	-88.84	358.29	1,423.96	2,969.59	2,909.87	59.72	49.725	
7,900.00	3,927.33	5,168.00	3,890.51	97.81	22.17	-88.84	358.29	1,423.96	3,066.91	3,006.49	60.42	50.758	
8,000.00	3,928.09	5,168.00	3,890.51	100.45	22.17	-88.84	358.29	1,423.96	3,164.41	3,103.29	61.11	51.780	
8,100.00	3,928.86	5,168.00	3,890.51	103.09	22.17	-88.84	358.29	1,423.96	3,262.05	3,200.26	61.79	52.792	
8,118.39	3,929.00	5,168.00	3,890.51	103.58	22.17	-88.84	358.29	1,423.96	3,280.02	3,218.10	61.91	52.977	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Legacy Directional Anticollision Report

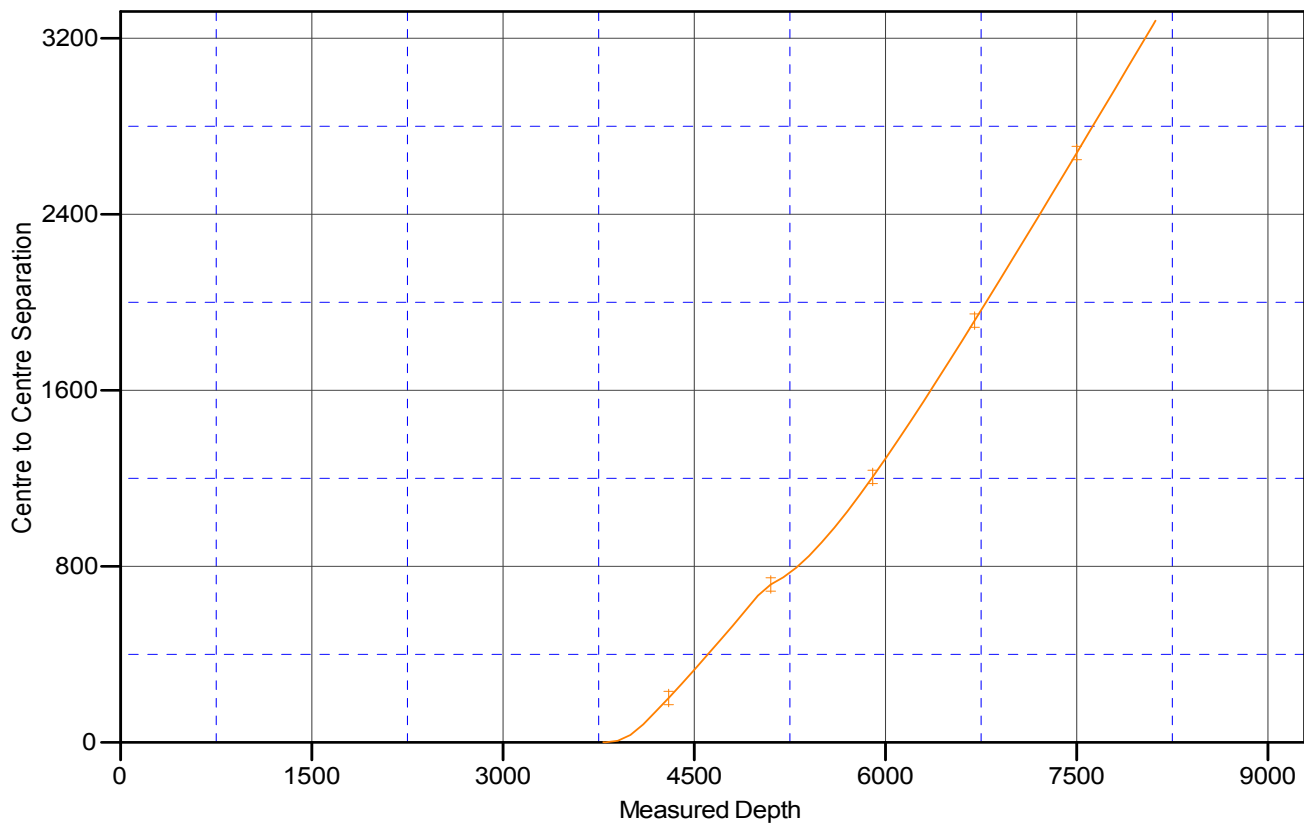


Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Reference Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Carracas 23A 4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST01	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan 3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL: 7339' + 18' KB @ 7357.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833334

Coordinates are relative to: Carracas 23A 4
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30
 Grid Convergence at Surface is: 0.30°

Ladder Plot



LEGEND

— Carracas 23A 4, OH, OH V0

Legacy Directional Anticollision Report



Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 23A 4
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Reference Site:	Carracas 23A 4	MD Reference:	GL: 7339' + 18' KB @ 7357.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Carracas 23A 4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ST01	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan 3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL: 7339' + 18' KB @ 7357.00usft

Offset Depths are relative to Offset Datum

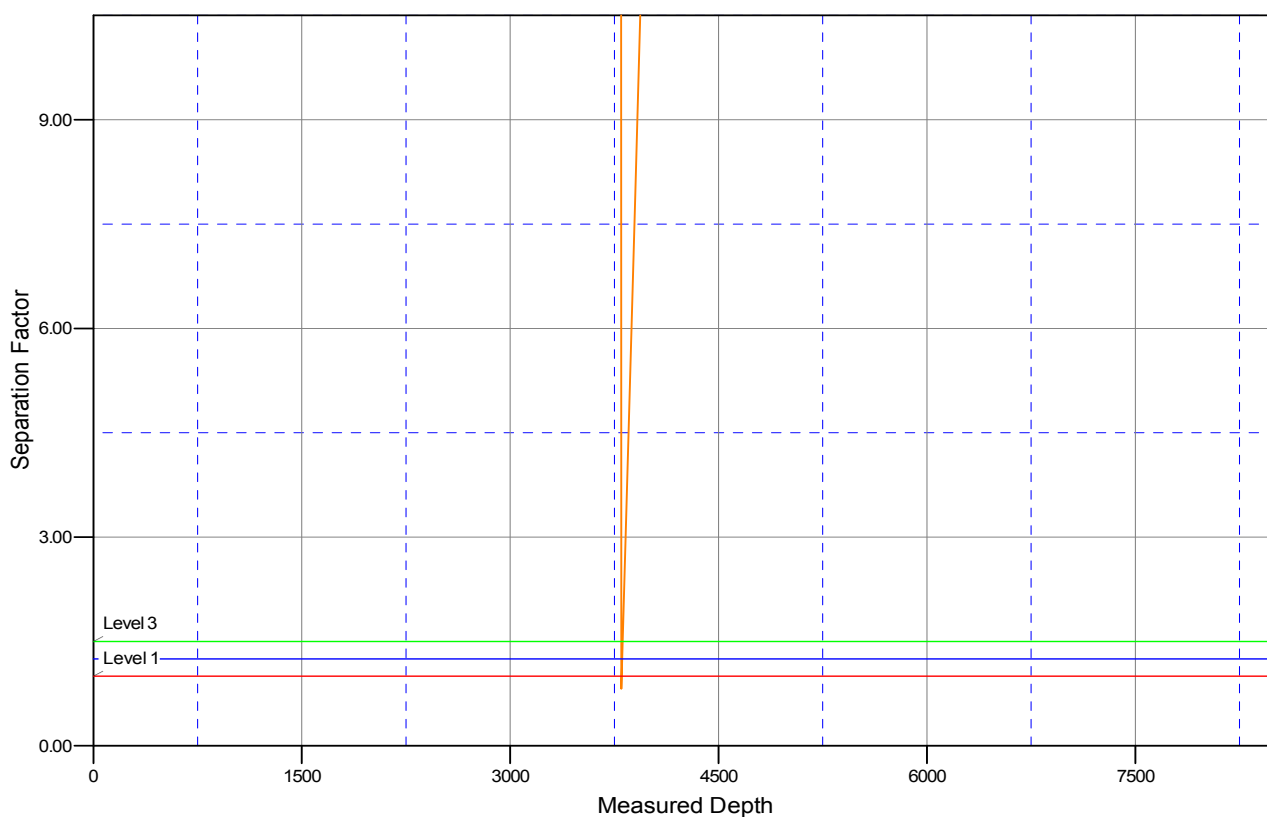
Central Meridian is -107.833334

Coordinates are relative to: Carracas 23A 4

Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30

Grid Convergence at Surface is: 0.30°

Separation Factor Plot



LEGEND

Carracas 23A 4, OH, OH V0

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 81301

COMMENTS

Operator: MorningStar Operating LLC 400 W 7th St Fort Worth, TX 76102	OGRID: 330132
	Action Number: 81301
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO review 2/18/2022	2/18/2022

District I

1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 81301

CONDITIONS

Operator: MorningStar Operating LLC 400 W 7th St Fort Worth, TX 76102	OGRID: 330132
	Action Number: 81301
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify NMOCD 24 hours before beginning operations.	4/18/2022
kpickford	Will require an As Drilled C-102 and directional survey to be submitted with the C-104 Packet.	4/18/2022